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IN THE CLAIMS

Please delete claim 2.

Please amend claims 1, 3-12, 16 and 20 as follows:


1. (Amended)                    A method of determining a Raman gain profile of an optically amplified fiber optic span, said method comprising the steps of:
- obtaining a first measured power profile for each of a plurality of system components;
  - applying one or more Raman pumps to said fiber optic span for providing additional optical amplification thereto;
  - obtaining a second measur[ing]ed [a] power profile for each of said plurality of system components;
  - calculating the Raman gain profile for the system based on the difference in the measured power profiles.

3. (Amended)                    A method according to claim 1 wherein power settings for the Raman pump are calculated relative to a loss profile of a fiber optic span measured under non traffic-carrying conditions in order to achieve a specified Raman gain profile.

4. (Amended)                    A method according to claim 1 wherein said steps of obtaining said measured power profiles for each of said plurality of system components include measuring: an originating profile at an output of a transmit amplifier, a loss profile of a fiber optic span, and an incident profile at an input of a receive amplifier.

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5. (Amended) A method according to claim 4 wherein if the incident profile changes, and it is known that the originating profile remains unchanged and the output power monitor conditions remain unchanged on the Raman pumps, it is determined that changes in the measured power profiles have occurred along the fiber optic span.
6. (Amended) A method according to claim 21 wherein the step of transmitting any change in said power profile comprises conveying basic information over an overhead channel.
7. (Amended) A method according to claim 21 wherein the step of transmitting any change in said power profile is performed when the magnitude of the change is outside limits defined by a tolerance band.
8. (Amended) A method according to claim 1 wherein said step of obtaining said measured power profile for each of said plurality of system components includes measuring: an originating profile at an output of a transmit amplifier, a loss profile of a fiber optic span, and an incident profile at an input of a receive amplifier.
9. (Amended) A method according to claim 22 wherein the step of transmitting any change in said power profile comprises conveying a status update on a regular basis from the transmit amplifier.
10. (Amended) A method according to claim 22 wherein said step of recalculating the Raman gain profile comprises summing updated values of the incident profile and the loss profile, and subtracting therefrom the originating profile.

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11. (Amended) A method according to claim 22 wherein said step of recalculating the Raman gain profile is performed at said receive amplifier.

12. (Amended) A system for determining a Raman gain profile of an optically amplified fiber optic span, said system comprising:

a plurality of optical spectrum analyzers for measuring first and second power profiles of said fiber optic span and of a plurality of system components, said first power profiles being measured before application of one or more Raman pumps to said fiber optic span, and said second power profiles being measured after application of said one or more Raman pumps, so as to determine the existence of a loss or a gain therein;

means for receiving the measured power profiles from the optical spectrum analyzers; and

means for calculating the Raman gain profile for the system based on the difference in the measured power profiles.

16. (Amended) A system according to claim 12 wherein the means for calculating comprises a processor.

20. (Amended) A system according to claim 18 wherein said means for receiving, said means for dynamically calculating, and said receive amplifier are all integral with one another.

Please add claims 21 to 23 as follows:

21. (New) A method according to claim 1 further comprising the steps of:

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continually monitoring power profiles of each of said plurality of system components after application of said one or more Raman pumps;

transmitting any change in said power profiles to a central location; and

recalculating, in real-time, the Raman gain profile following such change.

22. (New) A method according to claim 21 wherein said step of measuring a power profile for each of a plurality of system components includes measuring: an originating profile at an output of a transmit amplifier, a loss profile of a fiber optic span, and an incident profile at an input of a receive amplifier.

23. (New) A system according to claim 12 further comprising:  
means for continually monitoring power profiles of each of said plurality of system components after application of said one or more Raman pumps;  
means for transmitting any change in said power profiles to a central location; and  
means for recalculating, in real-time, the Raman gain profile following such change.

### **REMARKS**

In response to the first item in the Office Action, a specific reference to the serial number of the co-pending application has been added to the Cross-Reference section of the specification.